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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
SHEIKH, HUMERA N

ART UNIT	PAPER NUMBER
1615	

DATE MAILED: 01/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/614,118	CANNELL ET AL.	
	Examiner	Art Unit	
	Humera N. Sheikh	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2002 (paper no.17)* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

4a) Of the above claim(s) *1-29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30-56* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Status of the Application

Acknowledgement is made of the receipt of the request for an Extension of Time (1 month), the Election *with traverse* and the Amendment, all filed 10/17/02.

Applicant's election with traverse of Group II claims 30-56 in Paper No. 17 is acknowledged. The traversal is on the ground(s) that the Examiner has not demonstrated that examining Groups I and II together will constitute a serious burden. This is not found persuasive because the invention of Group I claims 1-29 (drawn to a method of protecting a keratinous fiber from extrinsic damage) are distinct from the invention of Group II claims 30-56 (method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage, comprising heating keratinous fiber) in that they comprise the addition of a heating step. These are deemed patentably distinct inventions, which would require a further search by the examiner. The requirement is still deemed proper and is therefore made FINAL.

Claims 1-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a non-elected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 17.

Claims 30-56 are pending. Claims 1-29 have been withdrawn. Claims 30-56 are rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 30-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wisotzki *et al.* (US Pat. No. 4,900,545, collectively "Witsozki") *or* Koga *et al.* (US Pat. No. 5,660,838, collectively, "Koga") *or* Syed *et al.* (US Pat. No. 5,641,477, collectively, "Syed") *or* Felardos *et al.* (US Pat. No. 5,866,111).

Witsozki teaches a method for the regeneration of hair split-ends and for caring for and revitalizing mistreated hair, comprising applying to the hair, a treatment

composition comprising mono- or disaccharides, more especially, the pentoses (5 C-atoms) and hexoses (6 C-atoms), and also the disaccharides derived from the pentoses and hexoses (see reference column 1, line 49 through col. 2, line 49).

Witsozki teaches that the mono- or disaccharides are any aldoses and ketoses or their mixtures. Witsozki further teaches that suitable monosaccharides include glucose, mannose, galactose, ribose, arabinose, xylose, fructose and sorbose, while suitable disaccharides include sucrose, lactose, maltose and cellobiose (col. 2, line 36-49). Also suitable are naturally occurring or technical mixtures wherein the mentioned mono- or disaccharides are predominant. Glucose is used as an example, in this instance.

The treatment preparations are in the form of aqueous solutions or emulsions, which may be formulated into shampoos or permanent wave setting lotions (cols. 3 and 5-6). Witsozki teaches that the sugars are present in the composition in percentages ranging from 0.1% to 8% by weight (col. 2, lines 24-30). This range clearly meets the applicant's required range of 0.01% to 5.00%.

The instant invention is drawn to a method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage, comprising the application of C_3-C_5 monosaccharide sugar composition.

Witsozki teaches such a method for regenerating, revitalizing or *repairing* hair comprising applying mono- or disaccharide sugar, particularly of pentoses (5 C-atoms) and the disaccharides derived from pentoses (see col. 2, lines 36-40). Witsozki teach at col. 6, lines 3-5, that, "in every case, it was found that the hairs had been regenerated, i.e., the split-ends had been partially *repaired*." There is no distinction observed

between the prior art and the instant invention since the applicant's objectives have clearly been met and addressed by the prior art.

Therefore, it would have been obvious to one of ordinary to one of ordinary skill in the art at the time the invention was made to use the teachings of Witsozki, who teaches a method of repairing split-end hair, comprising sugars, such as (5 C-atoms) pentoses and the disaccharides derived from the pentoses, because Witsozki demonstrates that a hair regenerating effect can be enhanced by employing a mono- or disaccharide to treat damaged hair. The expected result would be an improved method for regenerating split-ends and ultimately, a progressive reparative process for keratinous substances.

Koga teaches a method for providing enhanced moisture retention and reducing excessive roughness and dryness of the hair comprising the application of a xylobiose sugar composition to the hair (see Abstract). Koga teaches that xylobiose preparations are effective not only in reducing excessive roughness and dryness of the skin to impart a natural moistness and luster but also in reducing excessive roughness and dryness of the hair to give a natural oiliness (col. 1, lines 8-14).

Xylobiose may be incorporated into hair care products, such as hair treatments, rinses and hair conditioners, and detergents such as hair shampoos and body shampoos. The preparations can be formulated into various dosage forms, such as aqueous solutions, emulsions and water/oil bilayer systems (col. 2, lines 14-26).

Xylobiose is taught to be contained in an amount of 0.0001% to 20-wt %, preferably 0.1% to 10 wt % of the composition (col. 2, lines 27-36). This range clearly meets the applicant's required range of 0.01% to 5.00%.

Koga teaches that the xylobiose composition contains xylan saccharifed products other than xylobiose, such as xylose and xylotriose. These materials will in no way, impair the moisture-retaining capability of xylobiose (col. 2, lines 37-46).

Bases that are used in the cosmetic compositions can include, sugar esters, saccharides and sorbitol, for example (col. 3, lines 5-15). The examples in columns 4-9, taught by Koga demonstrate the measurements of moisture retaining capability of xylobiose in various skin preparations. In Example 7 (col. 10), Koga teaches the use of xylobiose in a hair shampoo formulation. The results show a natural oiliness when actually applied to the hair and are satisfactory in reducing excessive roughness and dryness of the hair (and skin) (col. 10, lines 1-27).

The instant invention is drawn to a method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage. There is no distinction observed between the prior art and the instant invention, since the prior art teaches the reduction of roughness and dryness of the hair. The examiner notes that this is, in essence, a reparative process for improving damaged hair.

Koga teaches a method for reducing excessively dry, rough hair and restoring hairs natural oiliness with moisture. Rough, dry hair is usually brittle, weak hair. As is generally known, hair that is moist or oily tends to be stronger in nature than rough, dry hair. Koga teaches that the xylobiose composition, which is used in various forms (i.e.,

hair care products, such as hair treatments, conditioners, rinses, shampoos, etc), reduces the excessive dryness and roughness of hair.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the xylobiose composition of Koga, who demonstrates an effective method of reducing excessive rough, dry hair through the application of xylobiose, because Koga teaches that xylobiose exhibits high moisture retaining capabilities. The expected result would be moist, healthier looking, stronger hair.

Syed teaches a method for the reduction of hair damage and a process for relaxing hair fibers, comprising applying to the hair fibers, a lanthioniztion composition that comprises sugars, resulting in less damaged hair that has *greater tensile strength* as that compared to hair that does not contain sugar. The composition may contain one or more sugars, or a combination of hydrogenated starch and sugars. Syed teaches that the sugar may be contained in the composition in the range of about 0.1% to about 5.0% by weight of the composition (see reference column 2, lines 48-67). This range clearly meets the applicant's required range of 0.01% to 5.00%.

Representative sugars that can be used in the composition include, but are not limited to sucrose, glucose, fructose, sorbitol and glycerol. The sugars preferably used are sucrose or sorbitol (col. 3, lines 5-8). Syed teaches that the composition may be in the form of a solution or a cream (col. 3, lines 9-12).

The instant invention is drawn to a method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage, wherein repairing a damaged keratinous fiber, according to the applicant's interpreted definition, means increasing the alpha-structure and/or increasing the tensile strength of damage to keratinous fibers.

Syed teaches a method for increasing the tensile strength and reducing hair damage comprising the application of a composition composed of sugars (i.e., sucrose, glucose, fructose, sorbitol and glycerol). Syed explicitly teaches at col. 2, lines 48-56, that the addition of a sugar, directly applied to the lanthionization composition, surprisingly, results in hair that has greater tensile strength as compared to a lanthionization composition, which does not contain any sugars.

The applicant attempts to distinguish over the prior art by including specific definitions for the terms, "protecting" and "repairing". However, the prior art fully meets the criteria for providing an effective composition for preserving or increasing the tensile strength of hair. In addition, the applicant's have not shown any unexpected results that accrue from the use of C_3-C_5 sugars. The prior art has initially shown that beneficial effects are brought about by the use of various sugars in hair compositions.

Therefore, it would have been obvious to one of ordinary to one of ordinary skill in the hair art at the time the invention was made to use the teachings of Syed, who teaches a method for the reduction of damaged hair and particularly a method wherein hair can have greater tensile strength due to the application of a composition comprising sugars because Syed explicitly teaches that the addition of sugars to the composition

can surprisingly increase the tensile strength of hair. The expected result would be an effective method for the repair of hair fibers and thus stronger, healthier hair.

Felardos teaches mascara compositions comprising sugar esters, which permit better lengthening, curving, adhesion of the composition to the eyelash combined with very good tolerance by the eyelash and by the eye. The composition finds application in make-up products (mascaras) and in *hair styling and hair-care products* (col. 5, lines 22-26). Felardos teaches, that according to a preferred embodiment of the invention, the compositions additionally include at least one ester of monosaccharide and/or alkyl monosaccharide. This monosaccharide may be selected for example, for *pentoses*, mention is made of (D-) ribose, arabinose, xylose, ribulose, xylulose, hexoses, for example, glucose, altrose, mannose, glucose, fructose, sorbose, etc. (col. 2, lines 48-58). The composition includes at least one ester of fatty acid and of sucrose (see reference col. 1, lines 1-15 and 50-64).

Felardos teaches that the use of sugar esters makes it possible to obtain a composition whose consistency allows for easy application and later, when removed, retains an appearance of softness and suppleness. The composition contains from 0.5% to 20% of at least one fatty acid and sucrose (col. 1, line 59 through col. 2, line 6). This range clearly meets the applicant's required range of 0.01% to 5.00%. In addition, the composition may contain a mixture of sugar esters.

The compositions may be in the form of aqueous dispersions, oily dispersions, oil-in-water emulsions and the like (col. 5, lines 22-26). The examples demonstrate mascara formulations comprising the use of various sugar esters to improve the lengthening, curving and adhesive properties of the eyelashes using the sugar ester composition.

The instant invention is drawn to a method of protecting a keratinous fiber from extrinsic damage or repairing a keratinous fiber following extrinsic damage. The applicant's definition of "protecting" a keratinous fiber means preserving a greater degree of the alpha-structure and/or tensile strength of the damaged keratinous fiber. Similarly, the applicant's definition of "repairing" is increasing the alpha-structure and/or tensile strength of the keratinous fiber.

There is no significant distinction observed between the prior art and the instant invention since Felardos teaches a composition intended for use in mascaras, hair styling and hair-care products, comprising sugars - monosaccharides, wherein the composition enables better lengthening, curving and adhesion properties of the eyelashes with the composition. Hence, the composition also provides for improved tolerance by the eyelash and the eye. As is common knowledge to one of ordinary skill in this art, applying mascara to the eyelashes, thickens, coats and in essence, provides protection of a sort to the eyelashes, enabling stronger lashes ultimately.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the formulation of Felardos, who teaches sugar, monosaccharides in hair-care products and cosmetics, such as mascaras because

Felardos states that sugar esters, when employed as emulsifiers for use in hair, provide very good tolerance (col. 1, lines 39-41). The expected result would be an improved hair care/mascara composition.

In conclusion, the prior art teaches that the claimed sugars are useful n protecting keratin fibers from external damage. The sugars are useful in protecting hairs against split ends, increasing tensile strength and reducing damage during harsh treatments. The art further teaches that such sugars may be incorporated into formulations and subsequently treated permanent wave lotions or relaxing compositions because these sugars are known to provide beneficial properties to hair and keratinous fibers.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Humera N. Sheikh whose telephone number is (703) 308-4429. The examiner can normally be reached on Monday through Friday from 7:00A.M. to 4:30P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman Page, can be reached on (703) 308-2927. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.

HNS

January 10, 2003

THURMAN K. PAGE
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